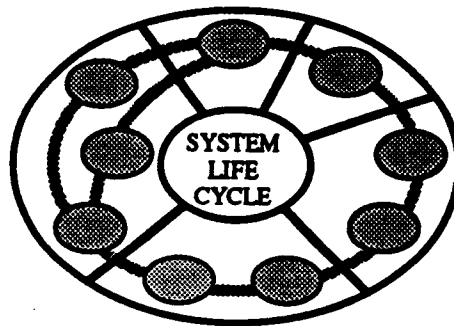


**OFFICE OF SOLID WASTE
AND EMERGENCY RESPONSE
(OSWER)**



**SYSTEM LIFE CYCLE
MANAGEMENT GUIDANCE**

Part 3: Practice Paper
***Project Participation
and Coordination***

January, 1989

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1. PRACTICE PAPER PURPOSE

This practice paper constitutes a section of Part 3 of the Office of Solid Waste and Emergency Response (OSWER) System Life Cycle Management Guidance. It describes the typical roles to be filled in conducting an information system project, and provides suggestions for determining the organizations that should fulfill each role. It expands on the roles identified in Parts 1 and 2 of OSWER's System Life Cycle Management Guidance. This paper also suggests organizations that should participate in the project, or with whom the project should be coordinated.

The topics addressed in this practice paper include:

- o Common roles to which specific organizations and individuals are assigned to accomplish the information system project;
- o Relationships between project roles;
- o Organizations that should be considered for participation or coordination in an OSWER system project; and
- o Criteria to be used in determining the appropriate organizations from which individuals should be assigned to each role.

Proper attention to project participation serves several important purposes in support of the system life cycle:

- o Helps ensure that the system focuses clearly on the information management problem and related requirements by identifying the appropriate organizations and enabling the most knowledgeable individuals to participate actively in the project;
- o Helps ensure that project support continues throughout the entire life cycle with the involvement of appropriate program managers and likely system users;
- o Helps ensure that the system is designed well and implemented effectively by ensuring that organizations and individuals with the proper technical skills and real experience are involved in the project;
- o Helps provide clear expectations of the participants in a system project, particularly of novice participants, regarding their respective roles and responsibilities on the project.

This practice paper discusses project participation from a broad perspective, considering the participation of offices

within OSWER, other Agency offices, and the external organizations (such as State agencies) that implement OSWER programs and are likely users of OSWER systems. It also considers organizations within the Agency that may be called on to provide expertise regarding information management analysis, technologies, and procurement.

It should be noted that the selection of project participants and the overall organization of the project team are important parts of the Project Management Plan and are documented in the Project Management Plan. A separate practice paper is available that provides more information about the project management plan.

This practice paper on Project Participation and Coordination does not address the responsibilities of individual project participants with respect to the individual activities of the system life cycle. Rather, it describes the general nature of the responsibilities for the organizations assigned specific project roles. Part 2 of the System Life Cycle Management Guidance identifies the specific activities of the life cycle, and the responsibilities for accomplishing them. Exhibit 1-1 provides an example, taken from Part 2 of the Guidance, illustrating specific responsibilities for several of the activities of a single phase, the Concept phase. Exhibit 1-2 illustrates how the roles identified in Part 2 can be viewed more simply as four groups:

- o Program Group
- o Project Team
- o Quality Assurance Group
- o Procurement Support Group

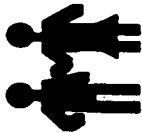
This practice paper does not describe how specific individuals should be selected to participate in the project, nor does it focus on the determination of potential contractor support needs. Assistance in these matters can be obtained from the OSWER Information Management Staff (within the immediate office of the Assistant Administrator), OSWER Information Management Coordinators (IMCs), and the Agency Office of Information Resources Management (OIRM).

2. ROLES AND GUIDELINES FOR SELECTING PARTICIPANTS

2.1. What is Meant by 'Project Participant'?

The life cycle management process describes a broad and diverse set of activities for solving an information management problem. The activities of the life cycle range from defining the problem and selecting the solution, to developing, operating and maintaining the solution. Project participants are those organizations and individuals that contribute in some substantive

EXHIBIT 1-1
ILLUSTRATION OF ROLES AND RESPONSIBILITIES
OF CONCEPT PHASE



CONCEPT PHASE ROLES AND RESPONSIBILITIES

ROLES AND RESPONSIBILITIES						
ACTIVITIES	OSWER PROGRAM MANAGEMENT	OSWER PROGRAM STAFF	PROJECT MANAGEMENT	PROJECT STAFF	QUALITY ASSURANCE	PROCUREMENT
DEFINE AND DOCUMENT HIGH-LEVEL FUNCTIONAL REQUIREMENTS DEFINITION		SUPPORT	LEAD	PERFORM	REVIEW	
DEFINE AND DOCUMENT HIGH-LEVEL DATA REQUIREMENTS DEFINITION		SUPPORT	LEAD	PERFORM	REVIEW	
DOCUMENT CONNECTIONS BETWEEN HIGH-LEVEL FUNCTIONAL AND DATA REQUIREMENTS		SUPPORT	LEAD	PERFORM	REVIEW	
ASSESS CAPABILITIES OF CURRENT SYSTEMS, DATA BASES, AND PROCEDURES		SUPPORT	LEAD	PERFORM	REVIEW	
DEFINE ALTERNATIVE CONCEPTS		SUPPORT	LEAD	PERFORM	REVIEW	SUPPORT
EVALUATE CONCEPTS AGAINST REQUIREMENTS		SUPPORT	LEAD	PERFORM	REVIEW	

EXHIBIT 1-2
 ROLES AND RESPONSIBILITIES -- FOUR MAJOR GROUPS



CONCEPT PHASE ROLES AND RESPONSIBILITIES

ROLES AND RESPONSIBILITIES

ACTIVITIES	OSWER PROGRAM MANAGEMENT	OSWER PROGRAM STAFF	PROJECT MANAGEMENT	PROJECT STAFF	QUALITY ASSURANCE	PROCUREMENT
DEFINE AND DOCUMENT HIGH-LEVEL FUNCTIONAL REQUIREMENTS DEFINITION		SUPPORT	LEAD	PERFORM	REVIEW	
DEFINE AND DOCUMENT HIGH-LEVEL DATA REQUIREMENTS DEFINITION		SUPPORT	LEAD	PERFORM	REVIEW	
DOCUMENT CONNECTIONS BETWEEN HIGH-LEVEL FUNCTIONAL AND DATA REQUIREMENTS		SUPPORT	LEAD	PERFORM	REVIEW	
ASSESS CAPABILITIES OF CURRENT SYSTEMS, DATA BASES, AND PROCEDURES		SUPPORT	LEAD	PERFORM	REVIEW	
DEFINE ALTERNATIVE CONCEPTS		SUPPORT	LEAD	PERFORM	REVIEW	SUPPORT
EVALUATE CONCEPTS AGAINST REQUIREMENTS		SUPPORT	LEAD	PERFORM	REVIEW	

way to the evolution of the solution, which often takes the form of an automated information system and/or data base.

All project participants need not be experts in ADP or information management technology. Although having participants with this expertise is vital, other participants may be selected due to their knowledge of the waste management program and/or their project management skills.

The selection of project participants depends heavily on the nature of the information management problem, the scope of organizations that experience the problem, and a number of characteristics of the solution to the problem, such as the specific data to be collected and the hardware to be used (for an automated system).

This section of the practice paper describes the roles of a typical system project and provides general guidelines for identifying the candidate organizations that should be called on to participate in a system life cycle project. Section 3 identifies specific characteristics of information management problems and their solutions that will help in choosing the appropriate organizations.

The specific roles described in this section are the roles shown in Exhibit 1-1:

- o Program Management,
- o Program Staff,
- o Project Management,
- o Project Staff,
- o Quality Assurance, and
- o Procurement Support.

Project participants may serve in a number of different roles for a given project. Some will be members of the project team, either in the role of project management or project staff. Others will be involved in the project to a lesser degree, but still will have an important role. In selecting the participants, it is critical that all participants, their respective supervisors, and the system project manager have a clear and consistent understanding of the participants' extent of involvement in the project (e.g., full time, half time, one half day per week). This involvement should balance the needs and priority of the project with the other program responsibilities the participants will continue to carry.

It is important to note that the users of the system serve in three different roles. Some users will be members of the

project team. Others will be members of a Quality Assurance Group. The remaining users may contribute to the project by assisting the project team or the Quality Assurance Group in a less formal capacity. This variety of user roles is illustrated in Exhibit 2-1.

2.2. Program Management

Program Management sponsors and funds the project. Key responsibilities include identification of the information management problem, selection of the project manager and other members of the project team, and approval of the recommended decisions and products of the project team throughout the life cycle.

The program management role usually is assumed by those organizations most directly affected by the information management problem. In general, the designated program manager for an information system project will be a member of the organization that will serve as the primary user of the data to be processed by the system. However, some projects have broad organizational impact -- for these projects, the program management role must be shared by multiple organizations.

Candidate organizations for this role include regional as well as headquarters organizations.

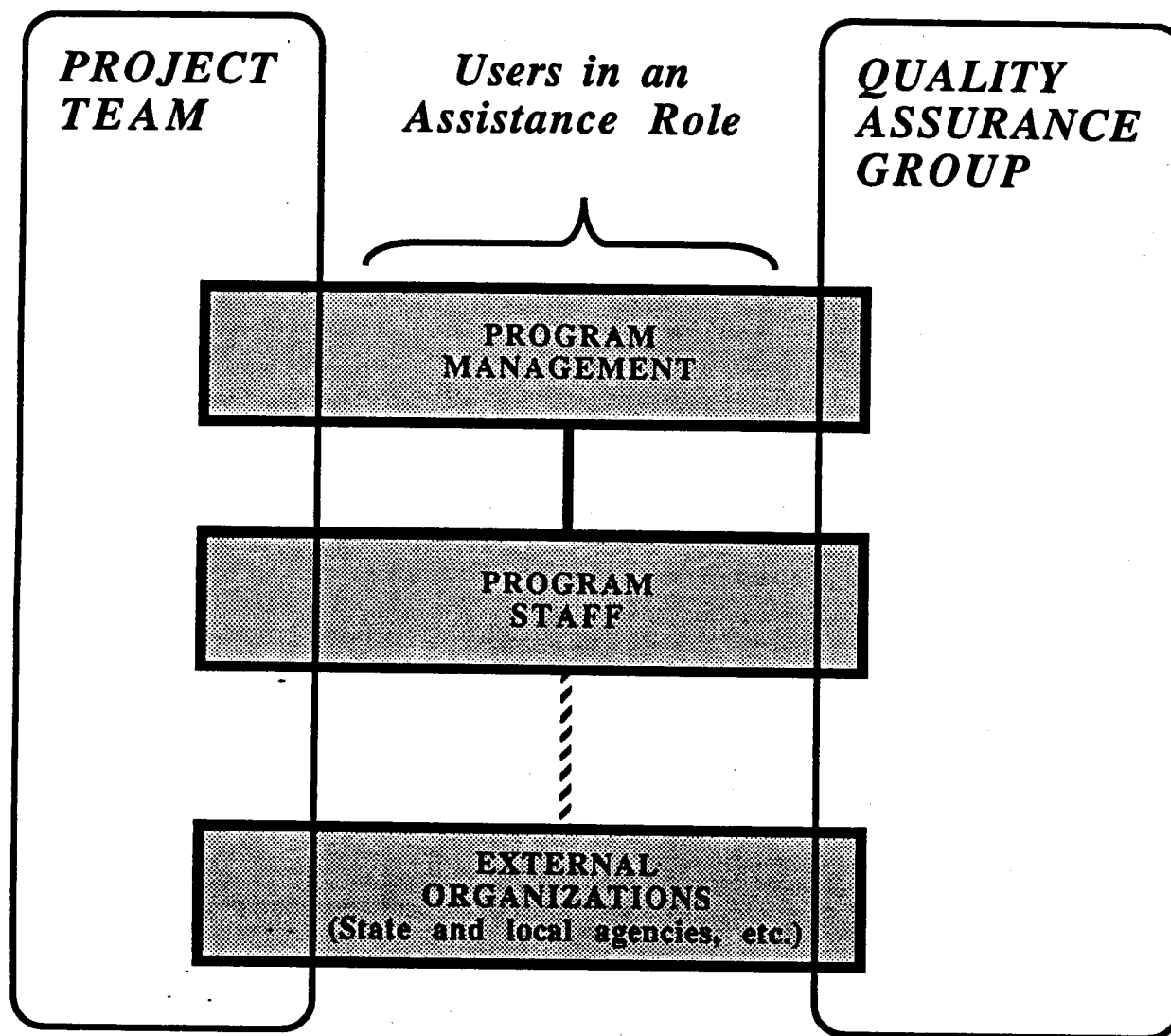
2.3. Program Staff

Program staff represent the day-to-day users of the system, and provide a very strong programmatic perspective of the information management problem and viability of the solution. Some members of the program staff will be assigned to the project team. Other members will have important responsibilities such as providing input and advice to the project team regarding the functional and data requirements, reviewing suggested system alternatives and the system design, and participating actively in acceptance testing of the system before it is made available to users.

Similar to the program management role for a project, the designation of participants serving as program staff reflects those organizations most directly affected by the information management problem. The designation of program staff must recognize those organizations that collect and/or generate the data needed to solve the problem, as well as those organizations that use the data.

For problems with broad organizational impact, individuals may be designated from multiple organizations. Widespread participation in this role is common for large systems, and could involve representatives of multiple OSWER offices at headquarters, other program offices, the regional offices, and

EXHIBIT 2-1: MULTIPLE ROLES FOR SYSTEM USERS



state agencies and agency associations. In some instances it may be appropriate to involve industry as well.

2.4. Project Management

The project management role provides direction and management of the system project, and retains ultimate responsibility and accountability for solving the information management problem within the approved timeframe and budget.

Each system project has a single Project Manager, an individual drawn most often from the organization(s) sponsoring the project. The project manager may be drawn from a regional or headquarters organization.

For a very large system project, such as for a national system involving several OSWER offices and the regions, the project management role may be performed by group of individuals. The establishment of a project management group helps ensure that a broad programmatic and organizational perspective is applied to key analyses and to recommendations to program management throughout the life cycle. For these projects, a single Project Manager is designated to manage the day-to-day work of the project, and is a member of the project management group (referred to by a name of its choosing). The relationship of the Project Manager to this group is established on a case by case basis by the program manager. For some projects, this group will be advisory to the Project Manager. For others, this group will have decision authority and will direct the Project Manager.

The selection of the organization(s) and individual(s) for the project management role is critical to the success of the project. This selection should carefully consider, and balance, the following factors:

- o Knowledge of program policy and operations commensurate with the scope of the information management problem;
- o General project management ability, including management of internal personnel and contractors (if appropriate);
- o Information system project management ability;
- o Expertise in information management methods, tools and technologies; and
- o Expertise in conducting procurements of information management technology or services (if applicable).

2.5. Project Staff

Project staff perform the majority of project activities, working under the direction of the Project Manager. These participants provide the full range of programmatic and technical

knowledge, skills, and abilities needed to accomplish the project, using individuals drawn from programmatic and information management organizations as appropriate. Quite often contractors serve as members of the project staff. The organizations and individuals filling this role, along with Project Management, are commonly referred to collectively as the 'project team'.

The Project staff bring to the project team a combination of the knowledge, skills and experience needed to successfully analyze the problem, select an appropriate solution, and develop, implement and maintain the solution until it is no longer needed. The Project Staff brings together many areas of expertise: programmatic, systems analysis, information management technology, and other areas.

The organizations and individuals selected for the Project Staff should provide the needed abilities, and represent, collectively, the organizations who are experiencing the information management problem or will be involved in developing, operating, and/or maintaining its solution. Project teams should always include representatives of user organizations, including organizations that will use the information provided by the system, and also organizations that will generate and/or collect the data to be processed by the system. Thus, the project staff often includes individuals outside of OSWER for a headquarters-based project, and individuals outside of the regional Waste Management Division for a single-region project.

The selection of the Project Staff is usually a joint effort of the Project Management and Program Management roles. Where coordination across program or organizational lines is needed (e.g., selecting team members from Regional offices), Program Management usually has lead responsibility for such coordination to ensure that individuals are assigned at the proper level and with the appropriate extent of commitment (i.e., level of effort) to the project.

For problems with broad organizational impact, individuals may be drawn from many organizations. Widespread participation on the Project Staff is common for large systems. Listed below are those organizations who may be called on to participate as members of the project staff.

- o Individual OSWER program offices,
- o Regional Waste Management Divisions,
- o Regional Environmental Services Divisions,
- o Regional Enforcement Divisions,
- o Regional Management Divisions,

- o Other Agency program offices,
- o Office of Information Resources Management,
- o OARM/RTP - National Data Processing Division,
- o Other Federal agencies,
- o State waste program management agencies,
- o Associations of State agencies, and
- o Industry and industry associations.

Section 3 of this practice paper provides additional guidance to help in selecting the project staff.

2.6. Quality Assurance

The quality assurance role conducts informal and formal reviews of system life cycle products, providing feedback to the project team and advice to Program Management regarding project approvals. The quality assurance role for a project is performed by individuals representing programmatic and information management organizations, with many of the same skills and abilities of Project Management and Project Staff roles. However, the individuals selected for quality assurance are not members of the project team as defined above. The organizational level for performing quality assurance, particularly for formal project reviews, depends on the threshold level of the system. (The OSWER formal review and approval process, including threshold analysis, is explained in the practice paper on 'System Life Cycle Reviews and Approvals'.)

Individuals assigned to the Quality Assurance role would be drawn from many of the same organizations as the Project Management and Project Staff. However, individuals assigned to the quality assurance role cannot also be assigned to these other roles. Doing so would result in a conflict of interest, with these individuals ostensibly performing an "independent" review of their own work, or of the work of their project team associates. It should also be noted that although individuals assigned to the Quality Assurance role, Project Management role and Project Staff role are drawn from the same organizations, far fewer individuals are assigned to the Quality Assurance role than to the combination of Project Management and Project Staff.

Leadership of the quality assurance role (referred to as 'lead reviewer') varies, depending upon the level of review and approval required for the project. This level is determined by an analysis referred to as 'Threshold Analysis'. The OSWER senior IRM official serves as lead reviewer for a Level I system, and an Information Management Coordinator (at headquarters) or another seasoned information management professional serves as

lead reviewer for a Level II system. The practice paper on 'System Life Cycle Reviews and Approvals' describes the distinction between these two levels of system projects in more detail.

It should be noted that some projects, particularly those that are very large (over \$1 million cost for Initiation phase through Development and Implementation Phase) or will have major impact on program operations, may at some point in their life cycle be subject to a review or audit by the Agency Office of the Inspector General (OIG). The interests and concerns of OIG may have a major impact on the overall schedule and cost of completing the system if not identified and resolved at the proper point of the life cycle. Obtaining OIG participation (in a Quality Assurance role) early in the life cycle would minimize subsequent disruptions due to suggested changes and their resolution. With early resolution, changes will have minimum impact due to OSWER's ability to incorporate the changes in the products of the current phase/stage, and by updating the Project Management Plan for future phases and stages. Program Managers are therefore strongly encouraged to request OIG participation in these projects at their inception.

Should OIG decline to participate, the OSWER/AA Information Management Staff should be informed. Several potential actions will be considered:

- o Sending copies of approved system decision papers to OIG, and
- o Contacting OIG at the beginning of each of the following phases and stages to participate in a Quality Assurance role:
 - Concept phase
 - Definition Stage
 - Design stage
 - Implementation stage
 - Evaluation stage

The action(s) taken should be recorded in the Project Management Plan.

2.7. Procurement

The Procurement role provides expert advice to the Project Manager in planning for the acquisition of needed resources other than EPA personnel. These resources include ADP and communications hardware and software, and contractor support services. The procurement role also participates actively in (often leading) other procurement activities of individual system projects.

Although in many cases the needed resources can be obtained via existing contracts, in some cases it will be necessary to conduct a new procurement. Both of these methods of resource acquisition require specialized knowledge, and conducting new procurements (when necessary) requires exceptional expertise to successfully navigate the intricacies of the procurement process.

As soon as a project identifies the need for resource acquisition, it is essential that the Project Manager contact the pertinent procurement support organization for additional information and insight. For most projects, the need to acquire resources will be identified as part of the system concept. For large projects in particular, the need to acquire contractor support may be evident early in the Concept phase, or as early as the Initiation phase.

Several organizations may provide procurement-related support to the Project Manager. However, only the OARM Procurements and Contracts Management Division (PCMD) can legally commit the Agency to a new contract or modify the provisions or terms of an existing contract. The other organizations listed below can serve in an advisory capacity to the Project Manager. In addition, some of them are required to approve procurement requests before they are processed by PCMD.

Some projects will acquire different types of resources and/or require the use of multiple contracts or procurements. For these projects, individuals may be drawn from multiple organizations, to handle multiple procurements. The specific organizations to be contacted within the Agency for procurement advice and support for a given project may include:

- o OARM/Procurement and Contracts Management Division
- o Regional Management Divisions, IRM Branch (for regional projects), *
- o OSWER program office Information Management Coordinators (IMCs) (for headquarters projects), *
- o OSWER/AA Information Management Staff, *
- o Regional Waste Management Division IRM Planning Coordinators (for regional projects), *
- o Office of Information Resources Management (OIRM),
- o OARM/RTP - National Data Processing Division, and
- o Other Federal agencies with interagency agreements with EPA, or applicable 'schedule' contracts (e.g., General Services Administration).

Project Managers should contact one of the organizations designated above with an asterisk (*) before contacting other organizations for procurement support.

2.8. Timing of Role Designation

To ensure a successful solution to the information management problem, it is important that all participants in the project understand what their role is, how they fit into the overall effort to solve the problem. Within the life cycle process, the roles of Program Management and Project Management are assigned during the Initiation phase. All other roles are assigned as early as possible in the next phase of the life cycle, the Concept phase. These assignments are refined, as appropriate, throughout the remainder of the life cycle based on the experience of the project.

3. OTHER FACTORS FOR SELECTING PROJECT PARTICIPANTS

The selection of specific organizations for the roles described in Section 2 above should be sure to obtain the participation of organizations with essential skills, insights and experience. The listing presented on the following pages is intended to aid Project Managers and Program Managers in identifying the appropriate organizations to participate in a particular project.

**FACTORS FOR SELECTION OF PROJECT PARTICIPANTS:
FACTORS PERTAINING TO THE INFORMATION MANAGEMENT PROBLEM**

Information required from State,
County or Local level
organizations.

- o OIRM - State/EPA Data Management Project
- o Regional Waste Management Divisions
- o Professional associations such as NGA, ASWPCA, ASTSWMO

Information required from EPA
Regional offices.

- o Regional Waste Management Divisions
- o Regional Environmental Services Divisions
- o Regional Management Divisions
- o Regional Enforcement organizations

Some of the required information is
classified, sensitive or can be
claimed as confidential business
information (CBI).

- o OSWER/AA Information Management Staff
- o Office of Information Resources Management
- o Facilities Management and Services Division (Security Unit)

Some of the required information is
generated or collected by another
EPA program office (external to
OSWER).

- o Senior Information Resources Management Official (SIRMO) for that program office
- o Office of Information Resources Management, Program Systems Division

**FACTORS FOR SELECTION OF PROJECT PARTICIPANTS:
FACTORS PERTAINING TO THE DESIGN OF THE SOLUTION**

- | | |
|---|---|
| <p>Information will be collected directly from State, County or Local level organizations.</p> | <ul style="list-style-type: none"> o OIRM - State/EPA Data Management Project o Regional Waste Management Divisions |
| <p>Information will be submitted by EPA Regional offices.</p> | <ul style="list-style-type: none"> o Regional Waste Management Divisions |
| <p>Any facet of system operation will require FTE or contract resources at the regional offices.</p> | <ul style="list-style-type: none"> o Regional Waste Management Divisions o Regional Management Division |
| <p>Any facet of maintaining the application software for the system will be performed in the regions (e.g., regional or state enhancements, installation of software upgrades/new releases from headquarters)</p> | <ul style="list-style-type: none"> o Regional IRM Branch |
| <p>Part of the system will operate on the EPA mainframe computers at the NCC and/or WIC.</p> | <ul style="list-style-type: none"> o OARM/RTP - National Data Processing Division <ul style="list-style-type: none"> -- National Computer Center (NCC) -- Washington Information Center (WIC) |
| <p>Part of the system will use the EPA telecommunications network</p> | <ul style="list-style-type: none"> o OARM/RTP - National Data Processing Division |
| <p>Part of the system will operate on the regional logical mainframe computers</p> | <ul style="list-style-type: none"> o OARM/RTP - National Data Processing Division o Regional IRM Branch |

**FACTORS FOR SELECTION OF PROJECT PARTICIPANTS:
FACTORS PERTAINING TO THE DESIGN OF THE SOLUTION
(Continued)**

- | | |
|---|---|
| Part of the system will operate on the regional minicomputers | o Regional IRM Branch |
| Part of the system requires the installation of new computer equipment (including personal computers), or needs office environmental conditioning equipment. | o OIRM at headquarters;
Regional IRM Branch

o Facilities Division (at headquarters or regional office, as appropriate). |
| Part of the system requires the installation of a local area network (LAN), or the modification of an existing (LAN) or any other wiring (e.g., power supply, telephone lines). | o OIRM at headquarters;
Regional IRM Branch

o OARM/RTP - National Data Processing Division

o Facilities Division (at headquarters or regional office, as appropriate). |
| Part of the system will use shared OSWER minicomputer capacity (e.g., Prime minicomputers). | o OSWER/AA Information Management Staff |
| Part of the System will submit or receive data from the Agencies Financial Management System or Document Control Register System (including Payroll System). | o OIRM Administrative Systems Division

o Agency Financial Management Division |
| Part of the System will process personnel data (potentially subject to Privacy Act requirements) | o Office of Administration, Personnel Management Division

o OIRM Information Management and Services Division |
| Part of the System will use software that is not an Agency standard, as defined by NDPD. | o OSWER Program Office Information Management Coordinator (for headquarters)

o Regional IRM Branch |

**FACTORS FOR SELECTION OF PROJECT PARTICIPANTS:
FACTORS PERTAINING TO THE DESIGN OF THE SOLUTION
(Continued)**

Part of the system, including manual procedures, relates to procedures for handling documents or other artifacts that are considered 'official record material' (includes use of digital imaging technology as well as microfilm, microfiche, or other hardcopy media).

- o OSWER/AA Information Management Staff
- o OIRM Information Management and Services Division

Part of the system will use expert system technology.

- o OSWER/AA Information Management Staff

High volume printing of documentation is necessary

- o Printing unit in Facilities Division, OARM (or regional counterpart)

OTHER CONSIDERATIONS

New information will be collected by the Agency from sources outside the Agency (OMB approval is required)

- o Office of Policy, Planning and Evaluation, Office of Standards and Regulations